Claims

[c1] A method for transporting a source pin in a Positron Emission Tomography (PET) system having a transmission ring, said method comprising:
aligning the transmission ring with a source pin within a storage device having a magnetic force holding the source pin in place; and
moving the source pin from the storage device to the transmission ring using a magnetic force greater than the magnetic force of the storage device.

[c2] A method in accordance with Claim 1 wherein said aligning the transmission ring comprises aligning the transmission ring with a source pin within a storage device having at least two magnetic forces including a permanent magnet force and an electromagnet force holding the source pin in place, said moving the source pin comprises moving the source pin from the storage device to the transmission ring using a magnetic force greater than the magnetic force of the permanent magnet and less than the combined magnetic force of the electromagnet and the permanent magnet.

[c3] A method in accordance with Claim 1 wherein said aligning the transmission ring comprises aligning the transmission ring with a source pin within a storage device having at least two magnetic forces including a permanent magnet force and an electromagnet force holding the source pin in place, said moving the source pin comprises moving the source pin from the storage device to the transmission ring using a magnetic force at least twice greater than the magnetic force of the permanent magnet and less than the combined magnetic force of the electromagnet and the permanent magnet.

[c4] A method in accordance with Claim 1 wherein said aligning the transmission ring comprises aligning the transmission ring with a source pin within a storage device having at least two magnetic forces including a permanent magnet force of at least about 5.34 Newtons (N) and an electromagnet force of at least about 23.6 N holding the source pin in place, said moving the source pin comprises:
de-energizing the electromagnet force; and

moving the source pin from the storage device to the transmission ring using a magnetic force of at least about 10.67 N.

[c5] A method in accordance with Claim 1 further comprising moving the source pin from the transmission ring to the storage device using the magnetic force of the storage device.

[c6] A method in accordance with Claim 5 further comprising sensing a presence of the source pin in the storage device using a proximity sensor.

[c7] A method in accordance with Claim 6 wherein said sensing a presence of the source pin comprises sensing a presence of the source pin in the storage device using a proximity sensor comprising a normally open Negative-Positive-Negative (NPN) inductive sensor.

[c8] A method in accordance with Claim 6 wherein said sensing a presence of the source pin comprises axially sensing a presence of the source pin in the storage device using a proximity sensor.

[c9] A method in accordance with Claim 8 wherein said axially sensing a presence of the source pin comprises axially sensing a presence of the source pin in the storage device using a proximity sensor comprising a normally open Negative-Positive-Negative (NPN) inductive sensor.

[c10] An imaging system comprising:
a rotatable transmission ring;
a storage device adjacent said transmission ring;
at least one source pin storable in said storage device, said storage device having a magnetic force holding said source pin in place; and
a source of magnetic force on said transmission ring, said source configured to move said source pin between said storage device and said transmission ring.

[c11] A system in accordance with Claim 10 wherein said storage device has at least two magnetic forces including a permanent magnet force and an electromagnet force holding the source pin in place.

[c12] A system in accordance with Claim 10 wherein said source of magnetic force on

said transmission ring comprises a magnetic force greater than the magnetic force of said storage device permanent magnet and less than a combined magnetic force of said storage device electromagnet and said storage device permanent magnet.

[c13] A system in accordance with Claim 12 wherein said source of magnetic force on said transmission ring comprises a permanent magnet.

[c14] An imaging system comprising:
a rotatable transmission ring;
a storage device adjacent said transmission ring; and
a proximity sensor positioned to sense a presence of a source pin in said storage device.

[c15] A system in accordance with Claim 14 wherein said proximity sensor comprises a normally open Negative-Positive-Negative (NPN) inductive sensor.

[c16] A system in accordance with Claim 14 wherein said storage device comprises a magnetic force holding said source pin in place.

[c17] A system in accordance with Claim 15 wherein said rotatable transmission ring comprises a source of magnetic force configured to move said source pin between said storage device and said transmission ring

[c18] A processor configured to:
align a transmission ring with a source pin within a storage device having a magnetic force holding the source pin in place; and
move the source pin from the storage device to the transmission ring using a magnetic force greater than the magnetic force of the storage device.

[c19] A processor in accordance with Claim 18 further configured to:
align the transmission ring with a source pin within a storage device having at least two magnetic forces including a permanent magnet force and an electromagnet force holding the source pin in place; and
move the source pin from the storage device to the transmission ring using a

magnetic force greater than the magnetic force of the permanent magnet and less than the combined magnetic force of the electromagnet and the permanent magnet.

[c20] A processor in accordance with Claim 18 further configured to:
align the transmission ring with a source pin within a storage device having at least two magnetic forces including a permanent magnet force and an electromagnet force holding the source pin in place; and
move the source pin from the storage device to the transmission ring using a magnetic force at least twice greater than the magnetic force of the permanent magnet and less than the combined magnetic force of the electromagnet and the permanent magnet.

[c21] A processor in accordance with Claim 18 further configured to:
align the transmission ring with a source pin within a storage device having at least two magnetic forces including a permanent magnet force of at least about 5.34 Newtons (N) and an electromagnet force of at least about 23.6 N holding the source pin in place;
de-energize the electromagnet force; and
move the source pin from the storage device to the transmission ring using a magnetic force of at least about 10.67 N

[c22] A processor in accordance with Claim 18 further configured to receive a signal from a proximity sensor indicative of a presence of the source pin in the storage device.

[c23] A processor in accordance with Claim 18 further configured to receive a signal from a normally open Negative-Positive-Negative (NPN) inductive sensor indicative of a presence of the source pin in the storage device.

[c24] A processor in accordance with Claim 21 further configured to receive a signal from a normally open Negative-Positive-Negative (NPN) inductive sensor indicative of a presence of the source pin in the storage device.

[c25] A Positron Emission Tomography (PET) system comprising:
a rotatable transmission ring;

a storage device adjacent said transmission ring;

at least one source pin sized to be storable in said storage device, said storage device having a magnetic force holding said source pin in place;

a proximity sensor positioned to sense a presence of said source pin within said storage device; and

a source of magnetic force on said transmission ring, said source configured to move said source pin between said storage device and said transmission ring.